

a member of The GEL Group INC







PO Box 30712 Charleston, SC 29417 2040 Savage Road Charleston, SC 29407 P 843.556.8171 F 843.766.1178

gel.com

June 24, 2019

GEL482459

Mr. Scot Fitzgerald CH2MHill Plateau Remediation Company MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352

Re: CHPRC SAF X19-046 Work Order: 482459 SDG: GEL482459

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on June 20, 2019. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4505.

Sincerely,

Anna Dupree for Heather Shaffer Project Manager

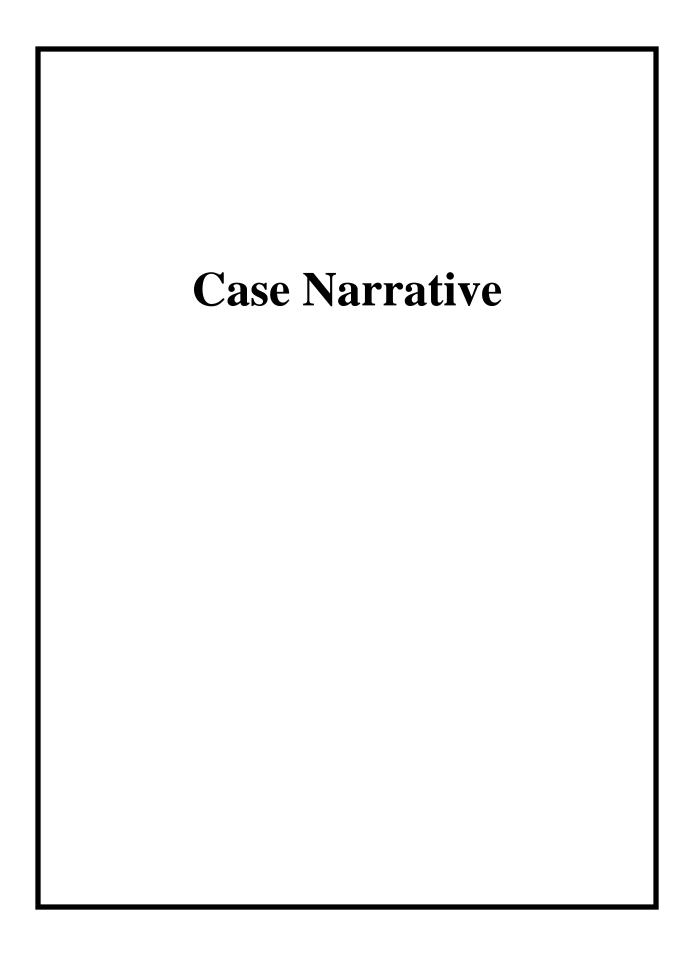
Purchase Order: 300071 - C18 Chain of Custody: X19-046-036

Enclosures



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General Narrative for CH2MHill Plateau Remediation Company CHPRC SAF SDG: GEL482459

June 24, 2019

Laboratory Identification:

GEL Laboratories LLC 2040 Savage Road Charleston, South Carolina 29407 (843) 556-8171

Summary

Sample receipt

The sample(s) arrived at GEL Laboratories, LLC, Charleston, South Carolina on June 20, 2019, for analysis. The sample was delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Items of Note All efforts were made by the lab to meet any short hold times. Samples that were analyzed outside of the initial hold time but still within 2X hold time will be noted in the lab case narrative.

Sample Identification

The laboratory received the following sample:

LaboratorySampleIdentificationDescription482459001B3NT42

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: General Chemistry.

We certify that this package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager (or designee) and the laboratory's client services representative as verified by their signatures on this report.

Page 2 of 21 SDG: GEL482459

GEL Laboratories LLC

GEL482459 June 26, 2019 Rev. 0

Anna Dupree for Heather Shaffer Project Manager

GEL Laboratories μc

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General Chemistry Technical Case Narrative CH2MHill Plateau Remediation Company SDG #: GEL482459 Work Order #: 482459

Ion Chromatography

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Times

Samples (See Below) were received with insufficient time to prep and/or analyze within the recommended method-specified holding time. The analysis was performed as soon as possible by the analyst. The data is qualified.

| Sample | Analyte | Value |
|-----------------------|------------------------|--|
| 482459001 (B3NT42) | Nitrate and Nitrite | Received 20-JUN-19, within holding, analyzed 21-JUN-19, out of holding 21-JUN-19 |

Sample Re-analysis

Samples1204312836 (Non SDG 482454002DUP), 1204312837 (Non SDG 482454002PS) and 482459001 (B3NT42) were re-analyzed due to instrument failure. The results from the reanalysis are reported.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Chain of Custody and Supporting Documentation

Date/Time:

Date/Time

Signature

Print First and Last Name

Date/Time

Signature

Print First and Last Name

Printed On 4/30/2019

Relinquished By:

Received By:

Disposed By:

FSR ID = FSR77991

FINAL SAMPLE Disposal Method (e.g., Return to customer, per lab procedure, used in process):

DISPOSITION

A-6004-842 (REV 3)

SDG: GEL482459 Page 6 of 21

Laboratories

SAMPLE RECEIPT & REVIEW FORM

| Client: CPRC | DOGUNDOS AND THE REVIEW FORM | | | | |
|--|---|--|--|--|--|
| | SDG/AR/COC/Work Order: 482459 | | | | |
| Received By: STACY BOONE | Date Received: 06.20.19 | | | | |
| | Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other | | | | |
| Carrier and Tracking Number | 7755 1372 6548-16 7755 1481 2889 10 | | | | |
| | 7755 1372 6570-10 7155 1372 7132-10 | | | | |
| Suspected Hazard Information | *If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation. | | | | |
| A)Shipped as a DOT Hazardous? | Hazard Class Shipped: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes No | | | | |
| B) Did the client designate the samples are to be received as radioactive? | COC notation or radioactive stickers on containers equal client designation. | | | | |
| C) Did the RSO classify the samples as radioactive? | Maximum Net Counts Observed* (Observed Counts - Area Background Counts): CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3 | | | | |
| D) Did the client designate samples are hazardous? | COC notation or hazard labels on containers equal client designation. | | | | |
| E) Did the RSO identify possible hazards? | If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: | | | | |
| Sample Receipt Criteria | | | | | |
| Shipping containers received intact and sealed? | Circle Applicable: Seals broken Damaged container Leaking container Other (describe) | | | | |
| 2 Chain of custody documents included with shipment? | | | | | |
| Samples requiring cold preservation within $(0 \le 6 \text{ deg. C})$? | Preservation Method: Wet lee lee Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: | | | | |
| Daily check performed and passed on IR temperature gun? | Temperature Device Serial #: IRI-19 Secondary Temperature Device Serial # (If Applicable): | | | | |
| 5 Sample containers intact and sealed? | Circle Applicable: Seals broken Damaged container Leaking container Other (describe) | | | | |
| 6 Samples requiring chemical preservation at proper pH? | Sample ID's and Containers Affected: If Preservation added, 1.01# | | | | |
| 7 Do any samples require Volatile | If Yes, are Encores or Soil Kits present for solids? Yes No NA (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes No NA (If unknown solve) No NA (If unknown solve) No NA (If unknown solve) | | | | |
| Analysis? | Are liquid VOA vials free of headspace? Yes / NoNA Sample ID's and containers affected: | | | | |
| 8 Samples received within holding time? | ID's and tests affected: | | | | |
| 9 Sample ID's on COC match ID's on bottles? | ID's and containers affected: | | | | |
| Date & time on COC match date & time on bottles? | Circle Applicable: No dates on containers No times on containers COC missing info Other (describe) | | | | |
| Number of containers received match number indicated on COC? | Circle Applicable: No container count on COC Other (describe) | | | | |
| 12 Are sample containers identifiable as GEL provided? | B3R059 NOT RECEIVED | | | | |
| COC form is properly signed in relinquished/received sections? | Circle Applicable: Not relinquished Other (describe) | | | | |
| Comments (Use Continuation Form if needed): | | | | | |
| 7755 1741 4416 - 1°c | 7755 1542 8615-10 7755 1067 3828-10 | | | | |
| | · | | | | |
| • | | | | | |
| 7755 1537-5342 - 1 c | 7766 11100 1000 1 | | | | |
| PM (or PMA) review: | 7755 1428 1853 1c | | | | |

GL-CHL-SR-001 Rev 6

Data Review Qualifier Definitions

2040 Savage Road Charleston, SC 29407 (843) 556-8171

Project Specific Qualifier Definitions for GEL Client Code: CPRC

| Qualifier | Qualifier Definition | Department | Fraction |
|---------------|---|-------------------|---------------|
| J | Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error. | | |
| J | The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate). Value is estimated | Organics | |
|) | Aroclor target analyte with greater than 25% difference between column analyses. | Organics | |
| ; | Analyte has been confirmed by GC/MS analysis | Organics | Pesticide |
| | The analyte was detected in both the associated QC blank and in the sample. | Organics | |
| | Concentration exceeds the calibration range of the instrument | Organics | |
| | The TIC is a suspected aldol–condensation product | Organics | Semi-Volatile |
| | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier | | |
| l | Spike Sample recovery is outside control limits. | | |
| | Duplicate analysis not within control limits | Inorganics | |
| | Result greater than quantifiable range or greater than upper limit of the analysis range | General Chemistry | |
| | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier | | |
| 3 | The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate). | Inorganics | Metals |
|) : | Results are reported from a diluted aliquot of sample. | | |
| | Reported value is estimated due to interferences. See comment in narrative. | | |
| 1 | Duplicate precision not met. | Inorganics | Metals |
| | Analyte failed to recover within LCS limits (0rganics only) | Organics | |
| | Reported value determined by the Method of Standard Additions (MSA) | Inorganics | |
| | Spike and/or spike duplicate sample recovery is outside control limits. | Organics | |
| 1 | Post–digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency. | Inorganics | |
| | The analyte was detected in the associated method blank >/= MDC or >5% sample activity. | Radiological | |
| , | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier | | |
| | Correlation coefficient for Method of Standard Additions (MSA) is < 0.995 | Inorganics | |
| 3 | The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate). | General Chemistry | |
| , | Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples. | Inorganics | Metals |
| : | Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples. | General Chemistry | |
| | Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide | General Chemistry | |
| X | Gamma Spectroscopy—Uncertain identification | Radiological | |
| | Analyte failed to recover within LCS limits | Radiological | Rad |

Rev. 0

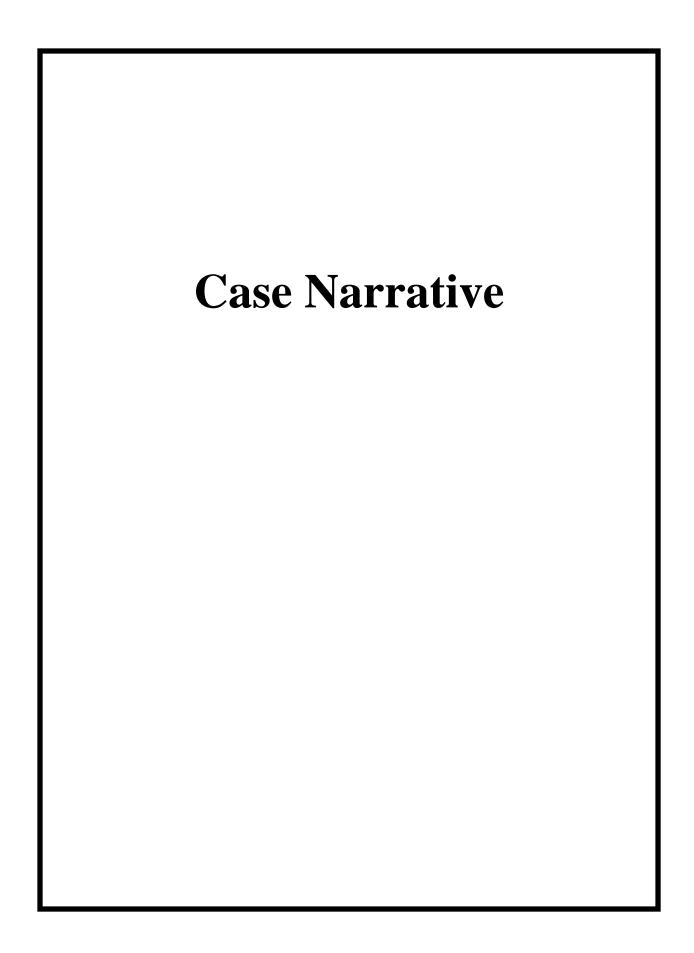
Report Date: 24-JUN-19



List of current GEL Certifications as of 24 June 2019

| State | Certification | | | | |
|--------------------------|------------------------------|--|--|--|--|
| Alaska | 17–018 | | | | |
| Arkansas | 88-0651 | | | | |
| CLIA | 42D0904046 | | | | |
| California | 2940 | | | | |
| Colorado | SC00012 | | | | |
| Connecticut | PH-0169 | | | | |
| DoD ELAP/ ISO17025 A2LA | 2567.01 | | | | |
| Florida NELAP | E87156 | | | | |
| Foreign Soils Permit | P330-15-00283, P330-15-00253 | | | | |
| Georgia | SC00012 | | | | |
| Georgia SDWA | 967 | | | | |
| Hawaii | SC00012 | | | | |
| Idaho | SC00012 | | | | |
| Illinois NELAP | 200029 | | | | |
| Indiana | C-SC-01 | | | | |
| Kansas NELAP | E-10332 | | | | |
| Kentucky SDWA | 90129 | | | | |
| Kentucky Wastewater | 90129 | | | | |
| Louisiana Drinking Water | LA024 | | | | |
| Louisiana NELAP | 03046 (AI33904) | | | | |
| Maine | 2019020 | | | | |
| Maryland | 270 | | | | |
| Massachusetts | M-SC012 | | | | |
| Michigan | 9976 | | | | |
| Mississippi | SC00012 | | | | |
| Nebraska | NE-OS-26-13 | | | | |
| Nevada | SC000122019-3 | | | | |
| New Hampshire NELAP | 2054 | | | | |
| New Jersey NELAP | SC002 | | | | |
| New Mexico | SC00012 | | | | |
| New York NELAP | 11501 | | | | |
| North Carolina | 233 | | | | |
| North Carolina SDWA | 45709 | | | | |
| North Dakota | R-158 | | | | |
| Oklahoma | 9904 | | | | |
| Pennsylvania NELAP | 68-00485 | | | | |
| Puerto Rico | SC00012 | | | | |
| S. Carolina Radiochem | 10120002 | | | | |
| South Carolina Chemistry | 10120001 | | | | |
| Tennessee | TN 02934 | | | | |
| Texas NELAP | T104704235-19-15 | | | | |
| Utah NELAP | SC000122018-27 | | | | |
| Vermont | VT87156 | | | | |
| Virginia NELAP | 460202 | | | | |
| Washington | C780 | | | | |
| - | | | | | |

General Chem Analysis



General Chemistry Technical Case Narrative CH2MHill Plateau Remediation Company SDG #: GEL482459 Work Order #: 482459

Product: Ion Chromatography

Analytical Method: 9056_ANIONS_IC

Analytical Procedure: GL-GC-E-086 REV# 26

Analytical Batch: 1888753

The following samples were analyzed using the above methods and analytical procedure(s).

| GEL Sample ID# | Client Sample Identification |
|----------------|--|
| 482459001 | B3NT42 |
| 1204312834 | Method Blank (MB) |
| 1204312835 | Laboratory Control Sample (LCS) |
| 1204312836 | 482454002(NonSDG) Sample Duplicate (DUP) |
| 1204312837 | 482454002(NonSDG) Post Spike (PS) |

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Holding Times

Samples (See Below) were received with insufficient time to prep and/or analyze within the recommended method-specified holding time. The analysis was performed as soon as possible by the analyst. The data is qualified.

| Sample | Analyte Value | | | | |
|--------|------------------------|--|--|--|--|
| | Nitrate and Nitrite | Received 20-JUN-19, within holding, analyzed 21-JUN-19, out of holding 21-JUN-19 | | | |

Sample Re-analysis

Samples1204312836 (Non SDG 482454002DUP), 1204312837 (Non SDG 482454002PS) and 482459001 (B3NT42) were re-analyzed due to instrument failure. The results from the reanalysis are reported.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

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Qualifier Definition Report for

CPRC001 CH2MHill Plateau Remediation Company Client SDG: GEL482459 GEL Work Order: 482459

The Qualifiers in this report are defined as follows:

- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- D Results are reported from a diluted aliquot of sample.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Name: Aubrey Kingsbury

Date: 25 JUN 2019 Title: Data Validator

Sample Data Summary

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Project:

Client ID:

CPRC0X19

CPRC001

Certificate of Analysis

Report Date: June 25, 2019

CH2MHill Plateau Remediation Company Company:

Address: MSIN R3-50 CHPRC

PO Box 1600

Richland, Washington 99352

Contact: Mr. Scot Fitzgerald Project: CHPRC SAF X19-046

Client Sample ID: B3NT42 Sample ID: 482459001

Matrix: WATER

Collect Date: 19-JUN-19 10:23 20-JUN-19 Receive Date: Collector: Client

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analy | st Date | Time | Batch | Method |
|-------------------|--------------------|-----------------|------|------|-------|----|----|-------|----------|------|---------|--------|
| Ion Chromatograph | hy | | | | | | | | | | | |
| 9056_ANIONS_IC | C: COMMON "As | Received" | | | | | | | | | | |
| Fluoride | В | 306 | 33.0 | 500 | ug/L | | 1 | LXA2 | 06/21/19 | 1943 | 1888753 | 1 |
| Nitrite-N | UX | 33.0 | 33.0 | 250 | ug/L | | 1 | | | | | |
| Chloride | D | 14800 | 1340 | 4000 | ug/L | | 20 | LXA2 | 06/21/19 | 2013 | 1888753 | 2 |
| Nitrate-N | DX | 5560 | 660 | 2000 | ug/L | | 20 | | | | | |
| Sulfate | D | 208000 | 2660 | 8000 | ug/L | | 20 | | | | | |
| The following An | alvtical Methods v | vere performed: | | | | | | | | | | |

Analyst Comments Method Description 9056_ANIONS_IC

9056_ANIONS_IC

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit



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QC Summary

Report Date: June 25, 2019

Page 1 of 3

CH2MHill Plateau Remediation Company

MSIN R3-50 CHPRC PO Box 1600 Richland, Washington

Contact: Mr. Scot Fitzgerald

Workorder: 48

482459

| Parmname | NOM | Sample Qual | QC | Units | RPD% | REC% | Range | Anlst | Date Time |
|--|-------|-------------|-------|-------|--------|------|------------|-------|----------------|
| Ion Chromatography Batch 1888753 | | | | | | | | | |
| QC1204312836 482454002 DUP Chloride | | 7650 | 7600 | ug/L | 0.548 | | (0%-20%) | LXA2 | 06/20/19 16:26 |
| Fluoride | В | 324B | 227 | ug/L | 35.3 | ^ | (+/-500) |) | |
| Nitrate-N | | 3080 | 3080 | ug/L | 0.0325 | | (0%-20%) | | |
| Nitrite-N | U | 33.0U | 33.0 | ug/L | N/A | | | | |
| Sulfate | D | 46000D | 46900 | ug/L | 1.97 | | (0%-20%) | | 06/20/19 16:56 |
| QC1204312835 LCS Chloride | 5000 | | 4770 | ug/L | | 95.5 | (80%-120%) | | 06/20/19 14:56 |
| Fluoride | 2500 | | 2650 | ug/L | | 106 | (80%-120%) | | |
| Nitrate-N | 2500 | | 2440 | ug/L | | 97.6 | (80%-120%) | | |
| Nitrite-N | 2500 | | 2540 | ug/L | | 101 | (80%-120%) | | |
| Sulfate | 10000 | | 10000 | ug/L | | 100 | (80%-120%) | | |
| QC1204312834 MB Chloride | | U | 67.0 | ug/L | | | | | 06/20/19 14:26 |
| Fluoride | | U | 33.0 | ug/L | | | | | |
| Nitrate-N | | U | 33.0 | ug/L | | | | | |

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QC Summary

Parmname **NOM** Sample Qual QC Units RPD% REC% Range Anlst Date Time Ion Chromatography Batch 1888753 U Nitrite-N 33.0 ug/L LXA2 06/20/19 14:26 U Sulfate 133 ug/L QC1204312837 482454002 PS Chloride 5.00 7.65 06/20/19 17:26 13.7 120 (75% - 125%)mg/L

2.89

5.84

2.52

14.8

mg/L

mg/L

mg/L

mg/L

102

110

101

102

(75% - 125%)

(75% - 125%)

(75% - 125%)

(75%-125%)

Notes:

Sulfate

Fluoride

Nitrate-N

Nitrite-N

Workorder:

482459

The Qualifiers in this report are defined as follows:

- < Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide
- > Result greater than quantifiable range or greater than upper limit of the analysis range

2.50

2.50

2.50 U

10.0 D

В

0.324

3.08

0.00

4.60D

- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
- D Results are reported from a diluted aliquot of sample.
- E Reported value is estimated due to interferences. See comment in narrative.
- N Spike Sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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06/20/19 17:55

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QC Summary

482459 Page 3 of 3

Parmname NOM Sample Qual \mathbf{QC} Units RPD% REC% Range Anlst Date Time N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

Workorder:

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

23 of 23